

**WHAT IS CLAIMED IS:**INSB<sup>1</sup>7

1. A video game system comprising:  
an external memory for storing a video game program;  
a game program executing processing system having a game microprocessor and a coprocessor, coupled to said game microprocessor, for cooperating with said game microprocessor to execute said video game program to generate a three-dimensional world display;  
at least one player controller operable by a player including a plurality of camera perspective control keys for generating video game control signals for modifying the displayed three-dimensional world point of view; said external memory including instructions for causing said game program executing processing system to respond to the actuation of each of said plurality of camera perspective control keys by modifying the displayed three-dimensional world point of view.

2. A video game system according to claim 1, wherein said external memory further includes instructions for causing said game program executing processing system to detect whether a player controlled character has been controlled to be in a predetermined

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display state, and for automatically modifying the camera mode if said predetermined display state is detected.

3. A video game system according to claim 2, wherein said predetermined display state is the state of Mario being in one of a swimming and a flying state.

4. A video game system according to claim 1, wherein said external memory further includes instructions for causing said game program executing processing system to detect whether a player controlled character has been controlled to be in a predetermined display area, and for automatically modifying the camera mode if said character is in a predetermined display area.

5. A video game system according to claim 4, wherein said predetermined display area is defined by the character's coordinate position in the current display frame.

6. A video game system according to claim 1, wherein said external memory further includes instructions for causing said game program executing processing system to detect whether a player

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controlled character has been controlled to be in a predetermined display terrain, and for automatically modifying the camera mode if said character is in said predetermined display terrain.

7. A video game system according to claim 6, wherein said predetermined terrain is defined by a code indicative of a topographical characteristic of the terrain at the character's current display screen location.

8. A video game system according to claim 1, wherein the modified point of view results in the display of the three-dimensional world from the subjective point of view of the player controlled character from substantially directly behind the head of the character.

9. A video game system according to claim 1, further including a peripheral processing subsystem comprising:

a first interface circuit, coupled to said coprocessor, and operable to receive and process at least one player controller related command;

a read write memory; and

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a second interface for receiving video game control data from said at least one player controller in response to said player controller related command and for loading said video game control data in said read/write memory.

10. For use in a video game system having an external memory for storing a video game program, a game program executing processing system having a game microprocessor and a coprocessor, coupled to said game microprocessor, for cooperating with said game microprocessor to execute said video game program, at least one player controller operable by a player for generating player controller related data, said player controller having a plurality of point of view control switches, a method of operating of said video game system comprising the steps of:

generating a first three-dimensional world display from a first point of view using said game microprocessor and said coprocessor in which a player-controlled character is depicted in the three-dimensional world;

detecting if any one of a plurality of point of view control switches on said player controller have been depressed by a player, and

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generating a second three-dimensional world display from a second point of view in response to the detection of the depression of one of said point of view control switches, said second point of view being different depending upon which point of view control switch was depressed by the player.

11. A method according to claim 10, further including the step of detecting whether a player controlled character is controlled to be in a predetermined display state, and for automatically modifying the camera mode if said predetermined display state is detected.

12. A video game system according to claim 11, wherein said predetermined display state is the state of Mario being in one of a swimming state and a flying state.

13. A video game system according to claim 10, further including the step of detecting whether a player controlled character is controlled to be in a predetermined display area, and for automatically modifying the camera mode if said character is in a predetermined display area.

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14. A video game system according to claim 13, wherein said predetermined display area is defined by the character's coordinate position in the current display frame.

15. A method according to claim 10, further including the step of detecting whether a player controlled character is controlled to be in a predetermined display terrain, and for automatically modifying the camera mode if said character is in a predetermined display terrain.

16. A method according to claim 15, wherein said predetermined terrain is defined by a code indicative of a topographical characteristic at the character's current display screen location.

17. A method according to claim 10, wherein the modified point of view results in a three-dimensional world display from the subjective point of view of the player controlled character from substantially directly behind the head of the character.

18. For use with a video game system console having a game program executing processing system including a game

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microprocessor and a coprocessor, coupled to said game microprocessor, for cooperating with said game microprocessor to execute said video game program to create a display simulating a three-dimensional world, and at least one player controller having a plurality of control keys and operable by a player to generate video game control signals, a portable storage device for controlling the operation of said video game system console comprising:

a memory media for storing video game instructions and graphics and sound data;

interface circuitry for coupling said video game instructions and said graphics and sound data retrieved from said memory media to said video game system console;

said video game instructions including instructions for causing said game program executing processing system to respond to the actuation of any one of a plurality of control keys of said player controller to execute instructions for changing the displayed point of view perspective in a displayed three-dimensional world in a manner depending upon which of said plurality of control keys was actuation.

19. A portable storage device according to claim 18, wherein said external memory further includes instructions for causing said

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game program executing processing system to detect whether a player controlled character is controlled to be in a predetermined display state, and for automatically modifying the camera mode if said predetermined display state is detected.

20. A portable storage device according to claim 19, wherein said predetermined display state is the state of Mario being in one of a swimming state and a flying state.

21. A portable storage device according to claim 18, wherein said external memory further includes instructions for causing said game program executing processing system to detect whether a player controlled character has been controlled to be in a predetermined display area, and for automatically modifying the camera mode if said character is in said predetermined display area.

22. A portable storage device according to claim 21, wherein said predetermined display area is defined by the character's coordinate position in the current display frame.

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23. A portable storage device according to claim 18, wherein said external memory further includes instructions for causing said game program executing processing system to detect whether a player controlled character has been controlled to be in a predetermined display terrain, and for automatically modifying the camera mode if said character is in said predetermined display terrain.

24. A portable storage device according to claim 23, wherein said predetermined terrain is defined by a code indicative of a topographical characteristic at the character's current display screen location.

25. A portable storage device according to claim 18, wherein the modified point of view results in a three-dimensional world display from the subjective point of view of the player controlled character from substantially directly behind the head of the character.

26. A portable storage device in accordance with claim 18, wherein said video game instructions further include instructions for rotating the three-dimensional display perspective in response to a player actuating a predetermined control member.

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27. A portable storage device in accordance with claim 18, wherein said video game instructions further include instructions for generating a three-dimensional structure into which a character may enter, said three-dimensional structure including a plurality of passageways for entry into a plurality of video game courses, said video game instructions further including instructions for permitting a character to be controlled by the player to wander outside the three-dimensional structure to thereby permit a player to become familiar with operating said player controller prior to entering a course.

28. A portable storage device in accordance with claim 18, wherein said video game instructions further include instructions for generating a three-dimensional structure into which a character may enter, said three-dimensional structure including a plurality of passageways for entry into a plurality of video game courses, wherein said video game instructions further include instructions permitting a character to be controlled by a player to wander inside the three-dimensional structure prior to entering a course, and a set of instructions for assessing whether a character has met criteria required for entering into each of said passages.

29. A portable storage device in accordance with claim 18, wherein said video game instructions further include instructions for generating a three-dimensional structure into which a character may enter, said three-dimensional structure including a plurality of passageways for entry into a plurality of video game courses wherein said video game instructions further include instructions for permitting a player controlled character to enter into a plurality of different courses, such that a player controlled character may selectively exit a course, select another course for entry, wander inside the three-dimensional structure and wander outside the three-dimensional structure.

30. For use in a video game system having an external memory for storing a video game program, a game program executing processing system having a game microprocessor and a coprocessor, coupled to said game microprocessor, for cooperating with said game microprocessor to execute said video game program, at least one player controller operable by a player for generating player controller related data, said player controller having an operation control member

and a plurality of point of view control switches, a method of operating said video game system comprising the steps of:

generating a first three-dimensional world display from a first point of view using said game microprocessor and said coprocessor in which a player-controlled character is depicted in the three dimensional world;

generating a second three-dimensional world display from a second point of view in response to the detection of a predetermined condition; and

generating a third point of view display in response to the player actuating said operation control member when said display is depicting said second point of view.

31. A method according to claim 30, wherein said predetermined condition is the depression of one of said point of view control switches, said second point of view being a function of which point of view control switch was depressed by the player.

32. A method according to claim 30, wherein said step of generating a second three-dimensional world display includes the step

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of generating a second point of view display from the perspective of the player-controlled character.

33. A method according to claim 32, wherein said step of generating a third point of view display includes the step of changing the point of view to coincide with the apparent turning of the characters head by the operation control member.

34. For use with a video game system console having a game program executing processing system including a game microprocessor and a coprocessor, coupled to said game microprocessor, for cooperating with said game microprocessor to execute said video game program to create a display simulating a three-dimensional world, and at least one player controller operable by a player to generate video game control signals, a portable storage device for controlling the operation of said video game system console comprising:

a memory media for storing video game instructions and graphics and sound data;

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interface circuitry for coupling said video game instructions and said graphics and sound data retrieved from said memory media to said video game system console;

said video game instructions including instructions for causing said game program executing processing system to respond to the detection of a player controlled character being in a predetermined state and for changing the displayed point of view perspective in a displayed three-dimensional world.

35. A portable storage device according to claim 34, wherein said external memory further includes instructions for responding to the actuation of a predetermined control key for changing the displayed point of view perspective.

36. For use with a video game system console having a game program execution processing system including a microprocessor for executing a video game program and a coprocessor, coupled to said game microprocessor, for cooperating with said game microprocessor to execute said video game program, at least one player controller operable by a player to generate video game control signals, and a

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portable storage device for controlling the operation of said video game system console comprising:

a memory media for storing graphics and sound data and video game instructions for processing by said game program executing processing system for generating a three-dimensional world display of at least a first, second and third video game play course using said graphics data; and a bus, coupled in use to said coprocessor, for transmitting address signals in parallel to said memory media and for receiving information accessed from said memory media;

said video game instructions including instructions for maintaining a cumulative total of the number of goals achieved by a player on said first and second video game courses and for preventing access to said third video game course if said cumulative total is below a predetermined threshold.

37. A portable storage medium according to claim 36, wherein said bus in a multiplexed bus and further including addressing logic circuitry for gating address signals received from said bus to address said memory media;

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readout circuitry for coupling information readout of said memory media to said multiplexed bus.

38. A portable storage device in accordance with claim 36, wherein said multiplexed bus further includes at least one address latching enable control line.

39. A portable storage device in accordance with claim 38, further including at least one register for receiving address information transmitted over said multiplexed bus in response to a control signal transmitted over said at least one address latching enable control line.

40. A portable storage device in accordance with claim 36, wherein said video game console includes a video digital to analog converter which generates a composite synchronization signal and wherein said portable storage device includes an input terminal for receiving said composite synchronization signal.

41. A portable storage device in accordance with claim 36, wherein said portable storage device includes at least one interrupt related terminal.

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42. For use with a video game system console having a game program executing processing system to execute a video game program and at least one player controller operable by a player to generate video game control signals; a portable storage device for controlling the operation of said video game system console comprising:

a memory medium for storing video game instructions and graphics data;

accessing circuitry for coupling said video game instructions and said graphics data from said memory medium to said video game system console;

said video game instructions including instructions for causing said video game processing system to generate digital signals representative of a first three dimensional world within which a player controlled character may enter and of a second three-dimensional world having first and second predetermined states, said video game instructions further causing said video game system to generate digital signals of a bounded area within which a player controlled character must enter to enter said second three-dimensional world, wherein the zone of said bounded area within which a player controlled character

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enters controls whether said second three-dimensional world will be in said first predetermined state or another state.

43. A portable storage device in accordance with claim 42, wherein said first three-dimensional world is a castle and said bounded area is a picture disposed on a castle wall.

44. For use with a video game system console having a game program executing processing system to execute said video game program and at least one player controller operable by a player to generate video game control signals; a portable storage device for controlling the operation of said video game system console comprising:

a memory medium for storing video game instructions and graphics data;

accessing circuitry for coupling said video game instructions and said graphics data retrieved from said memory medium to said video game system console;

said video game instructions including instructions for causing said video game executing processing system to generate digital representations of a plurality of different three dimensional courses

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within which a player controlled character may enter and achieve goals, and for generating a pause screen indicating the goals achieved in each of said plurality of different courses.

45. For use with a video game system console having a game program executing processing system to execute said video game program and at least one player controller operable by a player to generate video game control signals; a portable storage device for controlling the operation of said video game system console comprising:

a memory medium for storing video game instructions and graphics data;

accessing circuitry for coupling said video game instructions and said graphics data retrieved from said memory medium to said video game system console;

said video game instructions including instructions for causing said video game executing processing system to generate digital representations of a plurality of different three dimensional courses within which a player controlled character may enter a achieve goals, and for generating a plurality of pause screens, and instructions for

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determining which of said plurality of pause screens to select depending upon the state of the player controlled character.

46. For use with a video game system console having a game program executing processing system including a game microprocessor and a coprocessor, coupled to said game microprocessor, for cooperating with said game microprocessor to execute said video game program and at least one player controller operable by a player to generate video game control signals, a portable storage device for controlling the operation of said video game system console comprising:

a memory media for storing video game instructions and graphics and sound data;

accessing circuitry for coupling said video game instructions and said graphics and sound data retrieved from said memory media to said video game system console;

said video game instructions including instructions for causing said game program executing processing system to generate at least one title screen for selecting game options and for providing a display for a player to selectively modify to thereby permit a player to become

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familiar with operating said player controller prior to beginning game play.

47. A portable storage medium in accordance with claim 46, wherein said display is a display of a player controlled character and wherein the display is selectively modified by a player distorting the displayed character.

48. For use in a video game's system having a game program executing a processing system and at least one player controller operable by a player to generate video game control signals, and a portable storage device for controlling the operation of said video game system, a method of operating said video game system comprising the steps:

generating a display of three-dimensional close structure having an entry point and an exit point;

displaying a player controlled object outside the three-dimensional structure;

permitting the player controlled object to be controlled the three-dimensional structure upon detecting that said entry point has been hit by said player controlled character;

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displaying a picture on a wall of said three-dimensional structure depicting a three-dimensional world of a course of a video game course that a player controlled object may enter; and  
permitting the player controlled character to enter into said three-dimensional world by jumping into said picture.

49. For use with a video game system console having a game microprocessor for executing a video game program and a coprocessor, coupled to said game microprocessor, for cooperating with said game microprocessor to execute said video game program, at least one player controller operable by a player to generate video game control signals, and a player controller processor subsystem, coupled to said coprocessor; a portable storage device for controlling the operation of said video game system console comprising:

a memory media for storing video game instructions and graphics and sound data;

interface circuitry for coupling said video game instructions and said graphics and sound data retrieved from said memory media to said video game system console;

said video game instructions including instructions to be executed by said game program executing system for defining a first

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set of game courses and a second set of game courses, each game course having a predetermined number of goals which a player may attain, said video game instructions including instructions preventing a player from entering one of said second set of game courses unless the player has attained a predetermined number of the goals achievable in the first set of game courses, said predetermined number of the goals achievable being less than all the goals achievable.

50. For use with a video game system console having a game program executing processing system to execute said video game program to create a display simulating a three-dimensional world, and at least one player controller having a joystick control member and a plurality of control keys and operable by a player to generate video game control signals, a portable storage device for controlling the operation of said video game system console comprising:

a memory media for storing video game instructions and graphics and sound data;

interface circuitry for coupling said video game instructions and said graphics and sound data retrieved from said memory media to said video game system console;

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said video game instructions including instructions for causing said game program executing processing system to display a player-controlled character and to respond to changes in the joystick position to control the direction of motion of the player-controlled character and to respond to the amount of change in the joystick angular rotation to control the rate of the characters motion.

51. A portable storage device according to claim 50, wherein instructions in said memory media control said game program executing processing system to display the character in a running motion if the amount of joystick angular rotation is above a first predetermined value.

52. A portable storage device according to claim 51, wherein instructions in said memory media control said game program executing processing system to display the character in a running motion which is at a higher rate than when the amount of joystick angular rotation is at said first predetermined value, if the amount of joystick angular rotation is at a second predetermined value greater than the first predetermined value.

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53. A portable storage device according to claim 50, wherein instruction in said memory media control said game program executing processing system to display the character in a walking motion if the amount of joystick angular rotation is below a predetermined value.

54. A portable storage device according to claim 50, wherein instructions in said memory media control said game program executing processing system to display the character in one of an acceleration running mode and a deceleration running mode.

55. A portable storage device according to claim 54, wherein instructions in said memory media control said game program executing processing system to apply a different relationship between the amount of joystick change and the speed of motion in the acceleration and the deceleration modes.

56. A portable storage device according to claim 50, wherein instructions in said memory media control said game program executing processing system to detect whether a player controlled

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character is moving on a sloped surface and to modify the character's moving speed as a function of the slope of the surface.

57. A portable storage device according to claim 56, wherein said instructions control said game program executing processing system to detect whether a player controlled character is moving on an upwardly inclined sloped surface relative to the character's direction of movement.

58. A portable storage device according to claim 50, wherein instructions in said memory media control said game program executing processing system to display the character in a running motion with the upper body tilted forward if the amount of joystick angular rotation is above a first predetermined value.

59. A portable storage device according to claim 50, wherein instructions in said memory media control said game program executing processing system to detect whether the player controlled character is turning in a predetermined direction and to display the character with the upper body in the direction of the turn.

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60. A portable storage device according to claim 50, wherein instructions in said memory media control said game program executing processing system to detect whether a player controlled character is being subjected to an environmental condition and to control the character's movement as a function of the detected environment condition.

61. A portable storage device according to claim 60, wherein said environmental condition is the wind and the character is controlled to be moved in the direction of the wind.

62. A portable storage device according to claim 60, wherein said environmental condition is the condition of the terrain on which the character is disposed and the character's movement is controlled as a function of the terrain condition.

63. A portable storage device according to claim 50, wherein instructions in said memory media control said game program executing processing system to detect whether the player controlled character has been motionless for a predetermined period of time and to control the motion of the character to be indicative of inactivity.

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64. A portable storage device according to claim 63, wherein said character is displayed to be in a sleeping state.

65. For use with a video game system console having a game program executing processing system to execute said video game program to create a display simulating a player controlled character in a three-dimensional world, and at least one player controller having a operation control member and a plurality of control keys and operable by a player to generate video game control signals, a portable storage device for controlling the operation of said video game system console comprising:

a memory media for storing video game instructions and graphics and sound data;

interface circuitry for coupling said video game instructions and said graphics and sound data retrieved from said memory media to said video game system console;

said video game instructions including instructions for causing said game program executing processing system to display a player-controlled character and to detect the speed of the character's movement and in response to the detected speed to generate the

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character display with one of a first predetermined number of polygons and a second predetermined number of polygons.

66. A portable storage device according to claim 65, wherein said character is displayed with a first predetermined number of polygons which is greater than said second predetermined number of polygons, if said speed of the character's movement is below a predetermined speed.

67. A portable storage device according to claim 65, wherein said character is displayed with a second predetermined number of polygons which is less than said first predetermined number of polygons, if said speed of the character's movement is above a predetermined speed.

68. A portable storage device according to claim 66, wherein the character's face is not drawn with a substantially reduced number of polygons.

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